

REMARKS

Claims 1-6 are currently pending in this application. Claims 5 and 6 have been canceled. Claims 1 and 2 have been amended to further distinguish the invention from the prior art.

No new matter has been added in the amendments to claims 1 and 2, full support for those amendments being found in the specification in the paragraph beginning on page 6, line 12.

The specification has been amended to remove an informality regarding a co-pending patent application. No new matter has been added by this amendment to the specification.

Rejections Under 35 U.S.C. § 103

Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's prior art of Figure 4 in view of Shapess (U.S. Patent No. 5,514,943) and Phillips et al. (U.S. Patent No. 4,453,118). Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's prior art of Figure 4 in view of Shapess, Phillips and Fisher et al. (U.S. Patent No. 6,121,746). Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lau (U.S. Patent No. 6,412,123) in view of applicant's prior art of Figure 4, Shapess and Phillips. Claims 5 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lau in view of applicant's prior art of Figure 4. Claims 5 and 6 have been canceled. In view of the amendments to the claims herein, applicant respectfully traverses the rejections of claims 1-4.

As amended, the claims in this application now are limited to embodiments wherein the start capacitor for each speed is selected to minimize amperage spikes when switching speeds. Applicant submits that neither the admitted prior art, nor either of the cited references, either alone or in combination, make the claims as amended herein obvious to those of ordinary skill in the art. Accordingly, applicant respectfully requests that the rejections to claims 1-4 under 35 U.S.C. § 103 be withdrawn.

Applicant's Admitted Prior Art

Applicant's admitted prior art, as illustrated in Figure 4 of the application, describes electrical circuitry of variable speed electrical motors of the prior art wherein there is only one start winding and only one start capacitor for the entirety of the motor.

The Phillips Reference

Phillips, as noted in the office action, is directed towards maintaining the phase displacement of the current between the windings of an electrical motor. This is in contrast to the claimed invention, which is limited to the decreasing of amperage spikes associated with the high voltage applied when switching between a plurality of distinctly selected speeds.

In column 4, lines 55-60 of Phillips, it is disclosed that capacitors can be used in series with the start windings to maintain the phase displacement of the currents between the windings. Thus, the capacitor selected to maintain the phase displacement of currents between the windings requires entirely

different capacitors than capacitors required in the present invention to minimize amperage spikes.

The Shapess Reference

Shapess, as noted in the office action, discloses a single-phase, variable-speed motor constructed in a capacitor start configuration wherein the start circuit includes start windings connected in series with start capacitors in order to provide high torque during start conditions. For example, Shapess discloses in column 1, lines 19-30, that start circuits can include start windings connected in series with start capacitors in order to provide high torque during start conditions. Shapess teaches that a high amperage is used to provide high torque during start conditions, because there is a direct mathematical relationship between the amount of amperage applied to a motor and torque (i.e., the more amperage, the higher the torque produced).

Since high torque requires high amperage, this is contrast to the claimed invention, which is limited to the decreasing of amperage spikes associated with the high voltage applied when switching between a plurality of distinctly selected speeds.

Analysis

As noted above, each of the amended claims in this application is now limited to embodiments wherein the start capacity for each speed is selected to minimize amperage spikes when switching speeds.

Phillips is directed to "maintaining the phase displacement of the current between the windings of the motor." Thus, capacitors selected in Phillips to maintain current phase displacement would be unsuitable to counter amperage spikes in the invention. Conversely, capacitors chosen in Phillips to counter amperage spikes would be unsuitable to maintain current phase displacement.

Shapess is directed towards maintaining high torque during start conditions. To produce high torque, high amperage is required. Accordingly, the teachings of Shapess are directed opposite to the teachings and claims of the present application (wherein amperage spikes are minimized). A capacitor chosen for use in Shapess would be unsuitable to minimize amperage spikes in the invention and a capacitor chosen to minimize amperage spikes would be unsuitable for providing high torque in Shapess.

Thus, there is nothing in Shapess or Phillips which would suggest or give incentive to those of ordinary skill in the art to combine either Shapess or Phillips with applicant's admitted prior art to yield the present invention.

Moreover, combining the high amperage start winding capacitors of Shapess with the current phase displacement capacitors of Phillips would be readily recognized by those of ordinary skill in the art to not provide the motor described and claimed by the applicant (wherein amperage spikes are minimized during speed switches).

Therefore, the attempt to show that claims 1-4 would have been obvious to those of ordinary skill in the art at the

time the invention is in error, and the rejection of claims 1-4 under 35 U.S.C. § 103 should be withdrawn.

CONCLUSION

For the reasons set forth above, applicant respectfully submits that all of the claims remaining in the application are now in condition for allowance. Accordingly, reconsideration, reexamination and allowance of all claims is requested.

Respectfully submitted,

SHELDON MAK ROSE & ANDERSON

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By: Denton L. Anderson
Denton L. Anderson
Reg. No. 30,153

100 East Corson Street
3rd Floor
Pasadena, CA 91103
(626) 796-4000